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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,306	01/30/2002	Syuji Mayama	111857	7355

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OLIFF & BERRIDGE, PLC  
P.O. BOX 19928  
ALEXANDRIA, VA 22320

EXAMINER

NGUYEN, MINH T

ART UNIT PAPER NUMBER

2816

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

10/058,306

Applicant(s)

MAYAMA ET AL.

Examiner

Minh Nguyen

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

## **DETAILED ACTION**

### ***Drawings***

1. Figures 6-9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because the first phrase is a repeated information given in the title. Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, the recitation that the semiconductor to supply a power supply voltage to the semiconductor circuit component when an external switch is turned on in the preamble is misdiscriptive because as shown in Fig. 1 of the present invention, the power source at node 18 always supplies the power supply voltage to the semiconductor circuit component 10 regardless of the switch SW being ON or OFF. The recitation “a drive control circuit for controlling drive in a manner so that” on lines 12-13 is confusing because it is not clear what drive the drive control circuit is controlling. “power supply voltage” recited on line 14 lacks clear antecedent basis, i.e., it is unclear if this is referring to the power supply voltage recited on line 3 or it is referring to a different power source.

As per claim 2, the recitation that the drive control circuit is in series with the switch unit such that when the switch is ON, the power supply voltage is supplied from the drive control circuit to the control signal supply circuit is unclear and confusing, clarification is requested. As shown in Fig. 1 of the present invention, when SW is ON, the power supply +B supplies the power supply voltage to the gate of transistor 161, but the power supply does not supply the voltage to the control signal supply circuit 14 as recited. As understood by the examiner, the

switch unit SW is merely a means to control the ON/OFF state of transistor 16, it does not provide the power supply voltage from the drive control circuit 16 to the control signal supply circuit 14 as recited, and therefore, the recitation appears misdescriptive.

As per claim 3, the recitation “a power supply voltage having a rated value is supplied to said voltage supply circuit” on lines 8-9 is unclear, i.e., it is unclear if the recited power supply voltage having a rated value is the same as the power supply voltage recited on line 3 of claim 1. The recitation on the last six lines is so unclear and cannot be understood, i.e., it does not make sense for a switching device to supply the power supply voltage.

As per claim 9, the recitation on the last four lines is unclear, clarification is requested, i.e., as understood by the Examiner regarding Fig. 5, when the first and second switch units are ON, the power supply supplies the voltage to the gates of transistor 161 and 165, however, the power supply voltage does not supply from “said drive control circuit” (16b and 16c) to “said control signal supply circuit” 14 as recited. The correct recitation maybe -- whereint when said first and second switch units are ON, the first and second drive control circuits establish an electrical path from the power supply to the control signal supply circuit and ground so that said control signal is generated at the control terminal of the load control semiconductor switching device. --.

As per claim 10, the same problem exists as discussed in claim 3 above.

As per claim 12, the same problems exist as discussed in claim 5 and 7 above.

As per claims 2-13, these claims are further rejected because of the indefiniteness of claim 1.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 4,928,053, issued to Sicard et al..

As per claim 1, Sicard discloses a semiconductor circuit component (Fig. 1) capable of being driven when an externally provided switch unit (the switch unit which supplies the control signal to node 4, not shown) is turned on to supply a power supply voltage +V to said semiconductor circuit component, said semiconductor circuit component comprising:

a load-control semiconductor switching device (transistor 2) with a control terminal (the gate);

a control signal supply circuit (transistor P1) for supplying a control signal (the control signal at the gate of transistor 2) to said control terminal (the gate of transistor 2) of said load control semiconductor switching device 2 to drive said load-control semiconductor switching device; and

a drive control circuit (circuit block 3 and transistor N2) for controlling drive in a manner so that, only when said switch unit is turned on (a LOW signal is applied to node 3), a power supply voltage V+ is supplied from said drive control circuit to said control signal supply circuit to make said control signal supply circuit output the control signal (column 3, lines 55-62).

As per claim 2, Sicard further discloses said drive control circuit is disposed between a power supply +V and a ground and in series with said switch unit (since there is a path between the node 4, transistor N2 and ground, note that due to the 112 problem discussed above, the limitation “series” is only given patentable weight to the extent that if there is a path from the switch to ground through the drive control circuit, the recited limitation is met), so that only when said switch unit is turned on, the power supply voltage is supplied from said drive control circuit to said control signal supply circuit (the power supply voltage V+ is applied to the gate of transistor 2 through transistor P1).

As per claim 3, insofar as understood, Sicard teaches a drive control semiconductor switching device N2 having a control terminal which is the gate, when transistor N2 is OFF, the power supply voltage +V is applied to the gate of transistor 2 through transistor P1.

As per claim 5, due to the 112 problem of claim 3, insofar as understood, Sicard teaches the drive control semiconductor switching device N2 has the connection as recited.

As per claim 6, the recited first, second, third and fourth leading output terminals read on node 4, node ground, the drain terminal of transistor 2 and node 6, respectively.

As per claims 7-8, these claims are rejected for the same reasons noted in claims 5-6, respectively.

#### ***Allowable Subject Matter***

7. Claims 4 and 9-13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 4 is allowable because the prior art of record fails to disclose or suggest a semiconductor circuit component which includes a drive control circuit wherein the drive control circuit includes a voltage dividing circuit and a voltage suppressing circuit.

Claims 9-13 are allowable because the prior art of record fails to disclose or suggest a semiconductor circuit component which includes a drive control circuit wherein the drive control circuit includes first and second drive control circuits for connecting to the external first and second switch units, respectively, to allow an electrical path from the power supply to the first drive control circuit to the control signal supply circuit, the second drive control circuit and ground, as recited in claim 9.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent Nos. 6,320,449, 6,169,431, 4,603,269, 4,691,129 disclose various circuits for controlling a semiconductor switch to provide power for a load.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Nguyen whose telephone number is 703-306-9179. The examiner can normally be reached on Monday - Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 703-308-4876. The fax phone numbers for the



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organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Minh Nguyen  
Examiner  
Art Unit 2816

MN  
January 25, 2003